

I/WE CLAIM:

1. A washing machine comprising:
 - a cabinet shell;
 - an outer tub fixedly mounted within the cabinet shell;
 - an inner tub rotatably mounted within the outer tub, said inner tub including a plurality of front balancing fluid receiving pockets and a plurality of rear balancing fluid receiving pockets;
 - a nozzle assembly including first and second nozzle elements secured to the outer tub, each of said first and second nozzle elements including an inlet and an outlet leading to a respective one of the front and rear balancing fluid receiving pockets;
 - at least one balancing fluid delivery channel for directing balancing fluid to the nozzle assembly; and
 - means for directing a small amount of the balancing fluid from the at least one balancing fluid delivery channel to one of the first and second nozzle elements, wherein the small amount of balancing fluid is selectively directed into at least one of the front and rear balancing fluid receiving pockets in order to counteract an out-of-balance condition of the inner tub.
2. The washing machine according to claim 1, further comprising: a return channel, said return channel establishing a passage for the balancing fluid to return from the front and rear balancing fluid receiving pockets.
3. The washing machine according to claim 1, wherein the at least one balancing fluid delivery channel includes an outlet through which the

balancing fluid flows to the nozzle assembly, said outlet defining a valve seat.

4. The washing machine according to claim 3, wherein said means for directing includes at least one balancing fluid injector including a valve outlet configured to sealingly engage said valve seat.

5. The washing machine according to claim 4, wherein the valve outlet includes a tapered profile.

6. The washing machine according to claim 5, wherein the tapered profile is curvilinear.

7. The washing machine according to claim 4, wherein the nozzle assembly is positioned adjacent the valve seat such that operation of the at least one balancing fluid injector causes a dollop of balancing fluid to pass from said valve outlet, through the valve seat into the nozzle assembly.

8. The washing machine according to claim 4, wherein the at least one balancing fluid injector includes an O-ring that seals the balancing fluid injector within the at least one balancing fluid delivery channel.

9. The washing machine according to claim 1, wherein the nozzle assembly includes an arcuate main body portion having a first surface, an opposing second surface, and surrounding side surface portions, said main body portion forming an integrated one piece assembly from which project the first and second nozzle elements.

10. The washing machine according to claim 9, further comprising: a pair of locating pins projecting from the second surface of the arcuate main body portion, said locating pins being adapted to position the nozzle assembly on a central portion of the outer tub.
11. The washing machine according to claim 10, further comprising: a plurality of openings extending from the first surface to the opposing second surface of the arcuate main body portion, each of said plurality of openings receiving a respective fastener for securing the nozzle assembly to the central portion of the outer tub.
12. The washing machine according to claim 1, further comprising: first and second delivery passages leading from the at least one fluid delivery channel to the first and second nozzle elements respectively, each of the first and second nozzle elements including an outlet opening substantially perpendicular to a respective one of the first and second delivery passages.
13. The washing machine according to claim 12, wherein the outlet of each of said first and second nozzle elements has a sharp edge for shaping the balancing fluid.
14. The washing machine according to claim 13, wherein outlet of each of said first and second nozzle elements has a length less than 1/8".
15. The washing machine according to claim 13, wherein the sharp edge has a radius of up to 0.010".

16. A method of directing balancing fluid to a pocket provided in an inner tub, which is rotatably mounted in an outer tub, of a washing machine comprising:

supplying balancing fluid to a balancing fluid delivery channel defined, at least in part, by the outer tub;

causing a small amount of the balancing fluid to flow into a nozzle fixed to the outer tub;

directing the balancing fluid through the nozzle; and

leading the balancing fluid to the pocket.

17. The method of claim 16, wherein the balancing fluid is returned to a reservoir following completion of a spin cycle.

18. The method of claim 17, wherein the balancing fluid is returned under the force of gravity to a lower container and pumped to the reservoir during periods when no balance correction is required.

19. The method of claim 16, wherein the balancing fluid is directed substantially perpendicularly by the nozzle.

20. The method of claim 16, wherein the balancing fluid flows through a sharp edged orifice of the nozzle.

21. The method of claim 16, wherein the balancing fluid is gravity fed into the balancing fluid delivery channel.

22. The method of claim 16, wherein the small amount of balancing fluid is caused to flow into the nozzle by controlling an injector fixed relative to the outer tub.
23. The method of claim 22, wherein inner tub is provided with a plurality of balancing pockets and the controlling of said injector is timed to deliver the balancing fluid to a predetermined at least one of the plurality of balancing pockets as the inner tub is rotated during operation of the washing machine.
24. The method of claim 23, wherein the balancing fluid is delivered to the predetermined at least one of the plurality of balancing pockets as the inner tub is rotated about a substantially horizontal axis.
25. The method of claim 22, wherein the injector introduces a single dollop of the balancing fluid into the nozzle at a time.
26. The method of claim 17, wherein the balancing fluid exits the nozzle at a central hub portion of the inner tub.